REMARKS/ARGUMENTS

Claims 1-23 were pending in the Application. By this Amendment, new claims 24-32 are being added in order to advance the prosecution of the Application. No new matter is involved.

Beginning on page 2 of the Final Office Action of July 9, 2003, claims 1-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,677,749 of Tsubota et al. in view of U.S. Patent 5,942,066 of Sunaga et al. and JP-60-086515 of Yosuke. This rejection is respectfully traversed.

Turning first to the rejection of claim 1, the Office Action admits that Tsubota fails to disclose the use of a buffer plate comprising a heat-shrinkable material, having an "opening", and which is "preheated" in a curing process of a seal material.

In addition, Tsubota uses a material which is cured by irradiation of ultraviolet light as the seal material of a panel, rather than a thermosetting material. The amount of heat supplied to the buffer plate in the curing process is very small, and thus, Tsubota does not have to consider misalignment between the opening of the buffer plate and the display panel due to heat shrinkage. Therefore, Tsubota's disclosure would not motivate a person of ordinary skill in the art to "preheat" a buffer plate and then use the buffer plate for a curing process of the seal material.

On the other hand, the Sunaga reference discloses the use of a thermosetting seal material. However, there is no opening formed on the buffer plate (2b) to be used during the sealing process, and thus, there is no problem of misalignment between the opening and display area due to thermal shrinkage.

Therefore, although Tsubota and Sunaga disclose a buffer plate, Tsubota and Sunaga fail to disclose or even suggest "preheating" of a buffer plate comprising a

heat-shrinkable material, the use of the buffer plate in a curing process of a seal material, and an "opening" formed on the preheated buffer plate.

Yosuke (JP Laid-Open 60-086515) is newly cited in the final Office Action. Applicant is enclosing an unofficial translation of excerpts of this reference for the Examiner's convenience.

Regarding Yosuke, it is stated in the Office Action that "in Yosuke, polytetrafluoroethylene film is used because it has superior compression resistance (PAJ) and as such it can be implied that a polytetrafluoroethylene film with superior compression resistance will not misalign".

However, Yosuke relates to a flat cable using an optical fiber which is completely different from the present invention which relates to manufacturing of a liquid crystal display panel. Yosuke fails to disclose or even suggest a buffer plate as described in claim 1, which requires a very high alignment precision, that is, a buffer plate comprising a heat-shrinkable material, which is "pre-heated" and then used in a curing process of a seal material, which has an "opening".

In Yosuke, as described for example at page 4, top right column, line 2 from the bottom to the bottom right column, line 10 of the specification (see English translation enclosed), the polytetrafluoroethylene film has the form of a "tape". The "tape" of polytetrafluoroethylene film resin is "wrapped" around an outer peripheral surface of an optical transmission path 11 to form a buffer layer 17 (refer to Fig. 4 of Yosuke). In consideration of the function of the buffer layer 17 to protect the optical transmission path 11, it is clear that no one would think of forming an opening in the tape.

In addition, Yosuke describes that, on the outer periphery of an optical transmission path 11, a silicone resin layer is formed to a diameter of 0.45 mm and then a porous tetrafluoroethylene tape which is not calcinated and which is drawn is wrapped around to a diameter of 0.75 mm to form a buffer layer 17. From this

description, it can be deduced that the buffer layer 17 formed by wrapping the tape is wrapped to a thickness of 0.372 mm. Because the thickness of the tape is 0.05 mm, as described at the bottom right column, line 1 of the reference, the tape is wrapped around the peripheral surface of the fiber 16 which is covered by the silicone resin at least three times, forming a layered structure of three layers. In this structure of a plurality of wrappings for the same peripheral surface, and in which the outside of the buffer layer 17 is further covered by a resin having a rectangular cross section, it is clear that the alignment of the tape requires only a very low precision.

On page 4, bottom left column of Yosuke, there is a description that the PTFE tape to be wrapped around the optical transmission path 11 is formed by drawing a tape which is not calcinated to a size of three times the original at a temperature of 300° C. and maintaining the tape in an atmosphere at a temperature of 360° C. for ten seconds. On page 5, bottom left column, line 7 to the bottom right column, line 17 of Yosuke, however, there is a description that a drawn porous tetrafluoroethylene resin tape which is "incompletely calcinated" is wrapped around an electrical signal conductor 51 and the tape is calcinated at 340° C. In addition, there is a description that a cable formed through the latter process also has superior characteristics. In other words, it is clear that Yosuke is based on the knowledge that the PTFE tape can be used for the buffer layer of a core structure regardless of whether the PTFE tape is heated and then used or the PTFE tape is wrapped and then heated.

Therefore, a person with ordinary skill in the art would not be motivated to combine Yosuke with Tsubota and Sunaga, and, moreover, it is clear that, even if these references are combined as the Office Action has suggested, because Tsubota and Sunaga do not recognize the significance of the "preheating" of the buffer plate and because Yosuke only recognizes that the advantages are similar regardless of

the preheating process, the present invention in which a "preheated" buffer plate is used as the buffer plate having an opening in a region other than the seal region in a sealing process of a liquid crystal panel in order to realize a high alignment precision, cannot be made.

On April 3, 2003, Applicants filed an Information Disclosure Statement (IDS) which cited Japanese Patent Laid-Open Publication No. 2000-187226 (the " '226 Reference"). The '226 Reference discloses formation of a through-hole (opening) 2a which ends at sides which are internal to the internal periphery of a seal material on a buffer sheet to be overlapped on a panel. Like the other references discussed above, the '226 Reference fails to disclose or suggest "preheating" of the buffer sheet 2 before the buffer sheet 2 is used, or the necessity thereof. In other words, it is clear that a problem of misalignment due to heat-shrinking when a buffer plate having an opening is used in a sealing process of a liquid crystal panel is not known to a person with ordinary skill in the art.

Therefore, it is clear that the invention defined by claim 1 which prevents, through "preheating", generation of misalignment between the opening and display area due to the thermal shrinkage to allow precise alignment is not obvious from the citations, and such claim is submitted to clearly distinguish patentably thereover.

Nor can the inventions defined in independent claims 8 and 16 be viewed as obvious in view of the citations, for the reasons set forth in Applicants' previous response. In claims 8 and 16, it is clear that the buffer plate has a function of conducting heat to the thermosetting seal material and comprises a rigid film having a high rigidity and buffer films provided to sandwich the rigid film and having a lower rigidity than the rigidity of the rigid film. By providing such a rigid film within the buffer plate, the buffer plate of the present invention can be easily handled, for example, when the opening and the display area are aligned. This

structure also has the advantage that deformation of the buffer plate when the buffer plate is to be mounted on a panel or the like can be reduced.

Although Tsubota discloses that the buffer plate comprises a plurality of materials (glass fiber and fluoride resin), Tsubota fails to disclose or even suggest that the buffer plate comprises "a rigid film". Moreover, there is no description or suggestion of advantages that the precision of alignment between the opening of the buffer plate and the display area can be easily improved. Furthermore, there is no recognition of the necessity for such a structure in Tsubota. Sunaga fails to disclose a specific structure of the buffer plate. In Japanese Patent Laid-Open Publication No. 2000-187226 previously described, there is only a description that the buffer sheet (2) is "paper". There is no description that the buffer sheet has a layered structure, and, moreover, it is clear that there is no recognition of providing a particular rigidity to the buffer sheet.

In the present invention, because the thermally conducting buffer plate has a layered structure of at least three layers, that is, films having the buffering functionality and a rigid film, the degree of freedom for the type of "rigid film" which can be employed is high. For example, and as defined in claims 13 and 14, a metal may be employed. By employing a metal having a high thermal conductivity, a buffer plate can be obtained which is superior in the case of handling (ease of alignment) or the like while heat can be efficiently supplied to the thermosetting seal between panels in a short time. In Tsubota, an ultraviolet curing seal material is employed. The other cited references fail to disclose a layered structure. Therefore, a buffered plate according to the present invention having a layered structure with a "rigid film" cannot be properly viewed as obvious from the citations.

For these reasons, claims 1-23 are submitted to clearly distinguish patentably over the references, in their present form.

New claims 24-32 depend, directly or indirectly, from claim 1 or claim 8 and contain all of the limitations thereof. Accordingly, such new claims are also submitted to clearly distinguish patentably over the prior art.

In the case of new claim 24, such claim further defines claim 1 in terms of the preheating of the buffer plate being executed at the same temperature as the heating and curing process of the thermosetting seal material. Claim 25 further defines claim 1 in terms of the preheating of the buffer plate being executed after an opening is formed on the buffer plate. Claim 26 further defines claim 1 in terms of the preheating of the buffer plate being executed before an opening is formed on the buffer plate. Claim 27 further defines claim 1 in terms of the heating and curing process of the thermosetting seal material being executed at 150°C. Claim 28 further defines claim 1 in terms of the buffer plate being preheated after an opening is formed on the buffer plate, and the preheating is executed at a temperature of 150°C. which is identical to that for the heating and curing process of the thermosetting seal material. Claim 29 further defines the buffer plate of claim 8 in terms of the thermosetting seal material having a curing temperature of 150 °C. Claim 30 further defines the buffer plate of claim 8 in terms of the buffer film having a lower rigidity than the rigidity of the rigid film comprising a heat-shrinkable material and being preheated. Claim 31 further defines the buffer plate of claim 30 in terms of the buffer film having a lower rigidity than the rigidity of the rigid film being preheated at a temperature which is identical to the curing temperature of the thermosetting seal material. Claim 32 further defines the buffer plate of claim 8 in terms of the buffer film having a lower rigidity than the rigidity of the rigid film comprising a heat-shrinkable material and being preheated at 150° C. which is identical to the curing temperature of the thermosetting seal material.

In conclusion, claims 1-32 are submitted to clearly distinguish patentably over the prior art for the reasons discussed above. Therefore, reconsideration and allowance are respectfully requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6846 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
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